

Department of Agriculture, Trade and Consumer Protection
Division of Agricultural Development
Agricultural Development & Diversification Program (ADD)
Grant Project Final Report

Contract Number: 22027

Grant Project Title: Research and Development business infrastructure, equipment, dies and blend recipes for the processing of green wood fiber into residential and industrial grade wood pellet fuel.

Amount of Funding Awarded: \$25,000.00

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Please use the following questions as a guide for writing your grant project final report. In your final report, please answer each question as it relates to your grant project.

1) What was the original intent of the grant?

The original intent of the grant was to develop a blend of green Wisconsin wood fiber and pellet die configuration that would produce a premium grade residential wood pellet and a commercial grade wood pellet.

What did you want to accomplish with the grant?

With grant assistance, we wanted to complete different wood recipe trials on various tooling configurations. This was planned to get us to marketable versions of premium and commercial grades of wood pellet fuel.

How was it expected to benefit Wisconsin Agriculture?

The benefit to Wisconsin agriculture was to create a demand for 39,000 cords of low grade wood fiber to produce 36,000 tons of wood pellet fuel per year. The majority of these raw material purchases and the sale of the finished product were planned to occur within the State of Wisconsin.

What makes this project work important or significant?

This work is important to Wisconsin because it creates a new wood fiber outlet for Wisconsin fiber, creates a renewable energy product and creates direct and indirect jobs within the state.

2) What steps did you take to reach your goal?

We took a very systematic approach to developing our raw wood fiber recipes and die combinations. We collected, dried and ground pure wood samples from our local region. These un-pelletized samples were tested to pellet industry standards for physical and chemical properties. This data was then used to blend a recipe combination that was sent to Germany for die development.

All of these steps worked very well. The control of this base data was very instrumental in the overall design of our entire facility. With two residential dies in hand in November 2008, we began our recipe

and die trial combinations. A big challenge was in the area of learning how to set up and run the dies and rollers in our equipment. The engineering experience we hired was familiar with processing Western North American wood fiber. Together, we had to learn how to run Wisconsin fiber in the recipe combinations we had chosen.

Without the capability to produce a pellet it was impossible for us to get feedback from the marketplace on our chosen recipes. If there is one thing we could have done differently, it would have been to find an inexpensive way to produce a small amount of pellets for test burns with the end users of the product. This would have cut down on the product development to market introduction time table.

3) What were you able to accomplish?

To date, we have been able to develop our Premium Lumberjack and Standard Lumberjack brand of wood pellet fuel. These products were test marketed in January, February, and March 2009. The recipe and die combinations have been locked in since May of 2009. Market distribution has been established in Wisconsin, Minnesota, Michigan, and Iowa. Product is delivered in 40 pound bags, one ton totes or by bulk delivery systems.

4) What conclusions can you make based on project work the analysis of collected data?

The proprietary data collected on wood species materials, die pressway performance, bio-mass burn chamber results and wood material breakdown processes have allowed us to conclude on repeatable recipes. By using known data results from different wood combinations we are able to make a more consistent/dependable wood pellet fuel for the marketplace.

5) What do you plan to do in the future as a result of this project?

Our plans are to continue to ramp up our production rates and grow our market acceptance. Since January 2009 we have ramped up to a production rate of 2,500 tons of premium and standard grade pellets per month. The focus right now is to get the current tooling and recipe combinations producing at a rate of about 4,000 tons of pellets per month.

6) What information or additional resources are needed to commercially develop this enterprise?

Our enterprise could use additional funding to develop dies, products, and markets for some non-heating applications that are emerging for wood pellets. We could also use more information on the growth of commercial heating uses for wood pellets that involve bulk delivery and storage systems. On the raw material side, we could use additional resources to encourage the development of more in-woods bio-mass harvesting methods, especially on small tracts of land.

7) How should the agricultural industry use the results from your grant project?

The agricultural industry should continue to increase its understanding of wood pellet bio-mass as an emerging market. The knowledge gained from this project can be used to support other requests in the forestry industry from harvesting the raw material to promoting Wisconsin wood fiber in new alternative markets